

ЗАЩО РАЗМЕРЪТ НА СИВАТА ИКОНОМИКА ВАРИРА МЕЖДУ ДЪРЖАВИТЕ

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Резюме: Настоящото изследване разглежда сивата икономика като макроикономическо и институционално явление с различен мащаб между държавите. Целта е да се обяснят тези различия чрез анализ на фактори като данъчна тежест, институционално качество, регулации и пазар на труда. Подчертава се липсата на единно определение, като сивата икономика най-често се разбира като легални дейности, укривани от публичните власти. Анализът показва, че тя води до подценяване на реалния БВП и се измерва чрез преки, косвени и смесени методи. Установява се, че в развитите страни делът ѝ е по-нисък, докато в по-слабо развитите тя често има компенсаторна роля. В заключение се приема, че нейният размер се определя от взаимодействието между икономически стимули и институционални фактори.

Key words: сива икономика, укриване на доходи, институционална ефективност, данъчно бреме, порочен кръг

JEL: E26, O17, F63

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WHY DOES THE SIZE OF THE SHADOW ECONOMY VARY ACROSS NATIONS

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Abstract: This study examines the shadow economy as a macroeconomic and institutional phenomenon that varies across countries. The main objective is to explain these differences by analyzing factors such as tax burden, institutional quality, regulatory environment, and labor market conditions. The study highlights the lack of a unified definition, with the shadow economy most commonly understood as legal activities deliberately concealed from public authorities. The analysis shows that it leads to an underestimation of real GDP and is measured through direct, indirect, and mixed methods. It is found that its share is lower in developed countries, while in less developed economies it often plays a compensatory role. In conclusion, the size of the shadow economy is determined by the interaction between economic incentives and institutional factors.

Keywords: shadow economy, income concealment, institutional effectiveness, tax burden, the vicious cycle

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Introduction

The shadow economy includes economic activities intentionally kept out of sight of public authorities to avoid taxes, social security contributions, regulations, or administrative procedures. These activities often involve the production and exchange of legal goods and services but occur outside formal economic systems. The shadow economy exists in all countries, regardless of their level of development, although its size varies significantly, raising important economic and political issues.

In highly developed economies such as the United States and Switzerland, the shadow economy is relatively small and usually accounts for less than 10% of gross domestic product. In contrast, in countries in Southern and Eastern Europe, including Greece, Italy, Bulgaria, and Romania, it may exceed 20% to 30% of GDP. These differences reflect underlying economic, institutional, and social conditions.

The topic is significant due to its impact on economic performance and policy effectiveness. The shadow economy reduces budget revenues, distorts competition, and weakens public policies. At the same time, it provides income opportunities and acts as an adaptive mechanism during economic hardship. This dual nature makes it a complex phenomenon requiring in-depth analysis.

The object of the study is the shadow economy as a macroeconomic and institutional phenomenon that varies across countries. The subject focuses on the factors determining its size, such as tax burden, regulations, institutional quality, and labor market conditions, as well as their influence on the choice of economic agents to operate formally or informally.

The aim of the study is to explain cross-country differences in the scale of the shadow economy and identify the main determining factors. The analysis focuses on European Union countries, highlighting differences between developed and transition economies. The study applies a comparative, analytical methodology based on secondary data, examining relationships between key factors and the size of the shadow economy using existing studies and theoretical models.

1. Theoretical analysis of the phenomenon “shadow economy”

1.1. Definition of the concept of the shadow economy

Many authors have worked on this topic, but among them Friedrich Schneider stands out as a leading researcher in the field of the shadow economy. His work is distinguished by methodological precision and a significant contribution to the measurement and analysis of informal economic activities.

The shadow economy is a difficult-to-measure and hidden economic phenomenon. Various definitions of the shadow economy exist, some of which are narrower while others are broader. The following section presents several of these definitions.

In the broadest sense, according to Schneider (*Schneider, 2012*) the shadow economy includes all economic activities and the income they generate that avoid or bypass government regulation, taxation, and statistical observation. It covers both legal and illegal activities, as long as they are not officially recorded or included in national accounts. The key criterion is not the legal nature of the activity, but its visibility to public institutions. The author defines the concept through a critical review of existing interpretations, followed by a more restricted and analytically refined definition.

Schneider, however, deliberately narrows the scope of the concept in order to achieve greater analytical clarity. Within the framework of his own research, he defines the shadow economy as the totality of all market-oriented, essentially legal activities related to the production of goods and services that are intentionally hidden from public authorities. He emphasizes the intention to conceal, which is viewed as rational behavior on the part of economic agents, motivated by specific institutional constraints.

This deliberate hiding of activities is explained by several main reasons that structure the definition itself. First is ***the effort to avoid tax obligations, including both direct and indirect taxes***. Second is ***the avoidance of social security contributions***. The third element is related to ***non-compliance with labor market regulations***, such as minimum wages and safety standards. The fourth aspect includes ***evasion of administrative requirements***, for example statistical reporting or registration procedures. This systematization demonstrates that the shadow

economy is not a random phenomenon, but the result of the interaction between the regulatory environment and economic incentives.

The author explicitly excludes classic criminal activities such as drug trafficking and theft, as well as non-market household activities. This limitation is methodologically important, as it focuses on activities that could be part of the formal economy if they were reported. Thus, the shadow economy is seen as a “parallel” form of legal economic activity rather than part of the criminal sector.

In their article “Shadow Economy: Estimation Methods, Problems, Results and Open Questions,” Schneider and Buehn confirm a narrower definition (*Schneider & Buehn, 2018*). According to them, the shadow economy includes all market-based, legal production of goods and services that is intentionally kept out of sight of public authorities in order to avoid taxes, social security contributions, labor standards or administrative procedures.

In the article “The Impact of National Economic Development on the Shadow Economy,” Ginevicius, Kliestik, Stasiukynas, and Suhajda stress that there is no universally accepted definition of the shadow economy. They explicitly state that “no common terminology or concept defining the phenomenon of the shadow economy has thus far been agreed on either nationally or internationally.” (*Ginevicius, Kliestik, Stasiukynas, & Suhajda, 2020*).

Instead of a single unified definition, several approaches are presented that collectively shape the content of the concept (*Ginevicius, Kliestik, Stasiukynas, & Suhajda, 2020*):

- Statistical approach – “The part of a country’s economic performance that is not directly included in the calculations of the official GDP”.
- Legal approach – “All that is done to obtain financial and non-financial gains in violation of legal provisions”.
- Fiscal approach – “results... not accounted for since they are not declared or are concealed in order to avoid a tax obligation”.

Based on these approaches, it can be concluded that the shadow economy represents a set of economic activities that are not officially recorded, are carried out outside or in violation of the legal framework, and are often aimed at avoiding tax obligations.

Additionally, the authors examine the phenomenon in both a narrow and a broad sense. In the broad sense, it includes all illegal activities such as smuggling, fraud, and trafficking. This expands the scope beyond the mere statistical non-reporting of income.

Among the broader definitions is that proposed by Kanka Stoyanova, Krasimira Kirova, and Alla Kirova. In their monograph "Social Challenges of the Shadow Economy" (Стоянова, Кирова, & Кирова, 1999) they define the shadow economy as an economic, institutional, and social phenomenon, a dynamic system interacting with the formal economy. It remains closely linked to the formal sector, influencing growth, fiscal policy, and social processes. It includes activities that, due to their unregulated nature, limited visibility, or illegality, are excluded from official statistics and not fully controlled by the state, covering both legal but undeclared activities and those violating legal norms. They also stress that it operates within the market system alongside the formal sector and comprises three components: undeclared legal production, unreported non-cash income, and illegal production.

In the paper "The Hidden Economy – Measurement and Impact" (Стойков & Димитрова, 1999), Stoykov and Dimitrova base their approach on the System of National Accounts. Their definition, grounded in international practice, describes the hidden economy as production-oriented activities that may be legal but are kept out of official records to avoid obligations. This includes tax and social contribution avoidance, as well as non-compliance with labor regulations and administrative requirements.

Summarizing the findings of other authors, for the purposes of this study the following definition will be adopted: ***The shadow economy is economic activity that takes place outside formal institutions and is not recorded in official statistics. It includes undeclared labor, informal services, and unreported economic transactions.***

1.2. The relationship between the shadow economy and gross domestic product

A key issue is the relationship between the shadow economy and gross domestic product. GDP measures the value of final goods and services recorded through official channels. Since the shadow economy operates outside these

channels, it is largely excluded from GDP. As a result, in countries with a large informal sector, official GDP may underestimate actual economic activity.

According to Schneider (*Schneider, 2012*) the shadow economy includes economic activities that generate value added and would be part of officially measured GDP if they were not deliberately kept out of sight of public authorities. This implies a direct functional relationship between the two categories, in which the shadow economy represents a “hidden component” of overall economic activity that remains outside official statistics.

Schneider notes that a large share of shadow sector activities involves the production of legal goods and services that are, in principle, taxable and part of national accounts. However, due to tax avoidance, unpaid social contributions, and non-compliance with regulations, these activities are not recorded and are excluded from official GDP. As a result, measured GDP underestimates the true level of economic activity by omitting this unreported production. This view is supported by the broader definition, which includes all productive activities that would be taxed if declared to the state.

The main thesis defended by Ginevičius, Kliestik, Stasiukynas, and Suhajda (*Ginevicius, Kliestik, Stasiukynas, & Suhajda, 2020*), is the existence of a stable inverse relationship between GDP and the size of the shadow economy. As development rises, measured by GDP per capita, its share declines. GDP reflects key factors such as taxation, institutional quality, employment, and public trust, and should not be treated as a simple variable. Examining this relationship helps explain how the system functions as a whole, rather than focusing on individual components.

The relationship between the shadow economy and gross domestic product is considered complex and multidimensional, as both are directly linked through the way economic activity is measured and recorded within the national economy. The authors Stoyanova, Kirova, and Kirova (*Стоянова, Кирова, & Кирова, 1999*) are based on the understanding that GDP is an aggregate indicator that captures only officially recorded economic activity, which means that all activities belonging to the shadow economy, by definition, remain outside its scope.

This means that the existence and growth of the shadow economy lead to a systematic underestimation of the actual volume of goods and services produced in a country. In other words, real economic activity exceeds that recorded by GDP, as a

significant share of income and production is not declared or included in official statistics. Therefore, GDP cannot be seen as a fully accurate measure of economic development when a substantial shadow economy is present.

Stoyanova, Kirova, and Kirova argue that the relationship is not one-directional. GDP levels and dynamics also influence the shadow economy. Lower development, high unemployment, and low incomes increase incentives for informal activity, while higher and stable growth, stronger institutions, and effective control reduce its share. The shadow economy also distorts GDP measurement and structure. Income concealment and tax evasion reduce budget revenues, limit public investment and social policy, and may slow growth and deepen structural imbalances.

2. Measurement of the shadow economy

The measurement of the shadow economy is central to research, as it is inherently hidden and cannot be directly observed. There is no single universal method; instead, a combination of approaches is used to estimate its size. This is because these activities are not officially recorded and cannot be captured by standard statistical instruments.

According to Ginevičius, Kliestik, Stasiukynas, and Suhajda (*Ginevicius, Kliestik, Stasiukynas, & Suhajda, 2020*) the methods for measuring the shadow economy are divided into three main groups: **direct, indirect, and mixed approaches**.

Direct methods are based on the direct collection of information from participants in the economy. This includes surveys, interviews, and the analysis of results from tax audits and investigations. The main advantage of this approach is that it provides specific information; however, it also has a significant drawback related to the low reliability of the data, as participants often do not report their actual behavior accurately.

Indirect methods are more widely used and rely on economic indicators that reflect the shadow economy indirectly. These include cash demand analysis, income–expenditure comparisons, electricity consumption, and estimates of actual employment. The logic is that discrepancies between official data and real behavior can indicate shadow activity. For this reason, these methods are more practical and commonly used in research.

Mixed methods combine elements of both direct and indirect approaches with the aim of improving the accuracy of estimates. This approach makes it possible to use the strengths of both types of methods and to compensate for their weaknesses, but it requires a more complex methodology and a larger volume of data.

In the research of Schneider and other authors (*Schneider, 2012*), (*Schneider & Bühn, 2018*) the measurement of the shadow economy is a complex methodological issue due to its hidden nature, as it involves activities kept out of official statistics. Schneider notes that no single direct method exists; instead, a combination of indirect approaches is used to estimate its size. The key idea is that the shadow economy leaves indirect traces that can be analyzed with statistical and econometric tools.

In his research, Schneider states that the choice of measurement method is linked to the definition of the shadow economy, as different definitions include different activities. Measurement is therefore not fully objective and depends on the researcher's assumptions. Results from different methods may vary, but they still provide a reliable indication of the scale and dynamics of the shadow economy.

3. Motives and factors influencing the development of the shadow economy

Theoretical and empirical studies show that the shadow economy is influenced by a combination of economic drivers and institutional factors.

The analysis of the factors and drivers that determine the scale of the shadow economy is based on the understanding that this phenomenon is the result of a complex interaction between economic, institutional, and social variables. In the literature, as presented for example by authors such as Schneider, Loayza, and Maloney (*Edited by Franziska Ohnsorge and Shu Yu, 2022*), it is clearly emphasized that participation in the informal sector is not random behavior, but a rational choice shaped by specific drivers and constraints.

First, one of the most significant factors is the tax burden. High tax rates and complex systems create incentives for firms and households to avoid the formal economy. As compliance costs rise, economic agents seek alternative ways to preserve income by shifting to informal activities. Evidence shows that higher corporate and personal taxes are associated with a larger shadow economy, a finding

also supported by Schneider (*Schneider, 2012*), who systematically links the size of the shadow sector to the level of taxation.

Second, institutional quality plays a key role. Weak institutions, ineffective governance, and high corruption weaken the force of formal rules. When property rights are not protected and enforcement is weak, economic agents see fewer benefits in remaining in the formal sector. Countries with lower institutional quality tend to have higher informality, showing that the institutional environment acts as a structural factor that either constrains or encourages the shadow economy.

Third, regulations play a key role, especially in business and the labor market. Excessive administrative requirements, complex registration procedures, and strict labor rules raise the costs of operating formally. As a result, many small firms and self-employed individuals operate outside the official framework. Restrictive regulations act as barriers to entry into the formal sector, making the regulatory burden a major driver of the shadow economy.

Fourth, factors related to the labor market should also be considered. A shortage of formal employment opportunities, low productivity, and high unemployment increase the likelihood that individuals will turn to informal employment. In some cases, the shadow economy even offers higher incomes or more flexible conditions, which acts as an additional driver for participation. Differences in wages and employment opportunities influence the choice between the formal and informal sectors.

Fifth, socio-economic factors such as money transfers from abroad and the level of trust in institutions also play a role. High inflows of money from abroad can reduce dependence on formal employment and facilitate participation in informal activities. At the same time, low public trust in the state reduces the motivation to comply with rules, which further expands the shadow sector.

In summary, the shadow economy is shaped by interrelated factors, mainly the tax burden, institutional quality, the regulatory environment, and labor market conditions. These create constraints and drivers that influence the choice between formal and informal activity. This mix of economic costs and institutional weaknesses explains why its scale differs across countries.

4. Developed vs Undeveloped countries and The Vicious Cycle

The distinction between developed and less developed countries is central to analyzing the shadow economy, as its level, structure, and causes vary with economic and institutional development. In the academic literature, particularly in the work of Schneider and Enste “Shadow Economies: Size, Causes, and Consequences” (*Schneider & Enste, 2000*), it is emphasized that the share of the shadow economy as a percentage of gross domestic product is significantly higher in developing and less developed countries than in developed economies. This pattern reflects a complex interaction of economic, institutional, and social factors.

In developed countries, the shadow economy typically accounts for a smaller relative share, often in the range of 10% to 20% of GDP, as noted by Schneider and Buehn in “Shadow Economies in Highly Developed OECD Countries” (*Schneider & Buehn, 2012*) this is due to higher institutional quality, effective tax administration, and greater public trust in the state. In these economies, informal activity is often linked to attempts to avoid high taxes or regulations, but strong enforcement and sanctions limit its scale. Higher income levels also reduce incentives to participate in the shadow sector, as the formal economy offers sufficient opportunities for income generation.

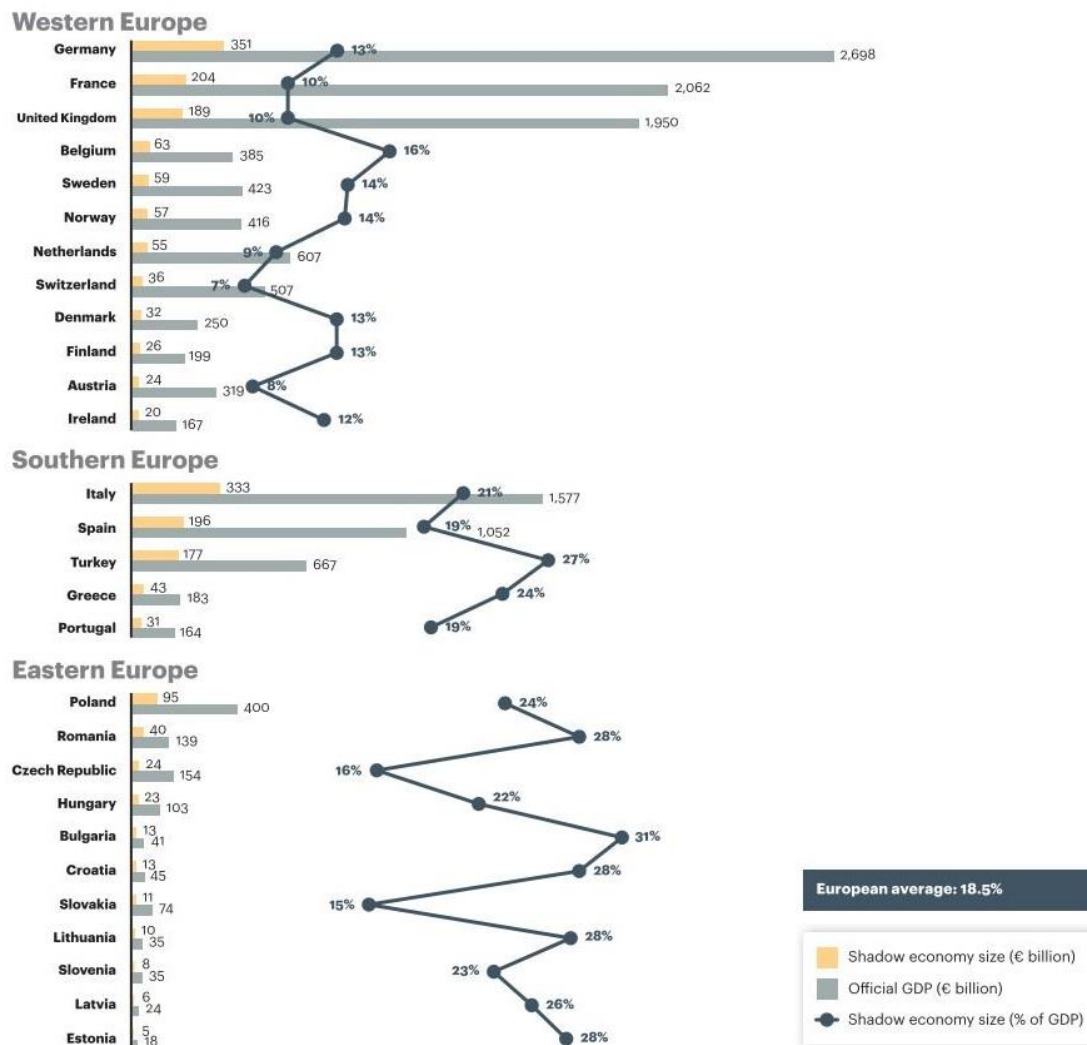
In less developed and developing countries, the shadow economy may reach 30 to 60 percent of GDP, indicating a structural problem. According to Medina and Schneider in the study “Shadow Economies Around the World: What Did We Learn Over the Last 20 Years?” (*Medina and Schneider, 2018*), the main causes are weak institutions, poor governance, high corruption, and limited formal employment opportunities. In such contexts, participation in the shadow economy is often a necessity rather than a choice, as many individuals lack access to the formal labor market or are excluded by administrative and economic barriers.

The distinction between developed and less developed countries with regard to the shadow economy can be further supported by the data and analyses presented by Schneider in the study “The Shadow Economy in Europe, 2013” (*Schneider, 2013*). The study presents specific quantitative measures that allow for a more in-depth understanding of the differences between the various groups of countries.

First, Schneider shows that the average size of the shadow economy in Europe is about 18.5 percent of GDP, an aggregate figure that masks regional differences. In

Western European countries such as Germany, France, and Austria, the share is lower, ranging from about 7 percent to 13 percent of GDP. This supports the thesis of Schneider and Enste (*Schneider & Enste, 2000*), that high institutional quality, effective enforcement, and well-developed financial systems limit the opportunities for keeping economic activity out of official records.

Figure 1. Shadow economy and GDP of European countries



Notes: Data for EU-27 (excluding Cyprus, Luxemburg, and Malta) plus Norway, Switzerland, Croatia, and Turkey. The size of the shadow economy is calculated using the MIMIC method.

Source: Dr. Friedrich Schneider, Johannes Kepler University of Linz, Austria; Eurostat; A.T. Kearney analysis

The study shows that in Eastern European and less developed countries the shadow economy reaches higher levels. According to Figure 1, countries such as Bulgaria, Croatia, and Lithuania have shares of about 28% to 31% of GDP. This cannot be explained only by economic development, but must be considered in the context of weaker institutions, lower trust in the state, and limited access to formal

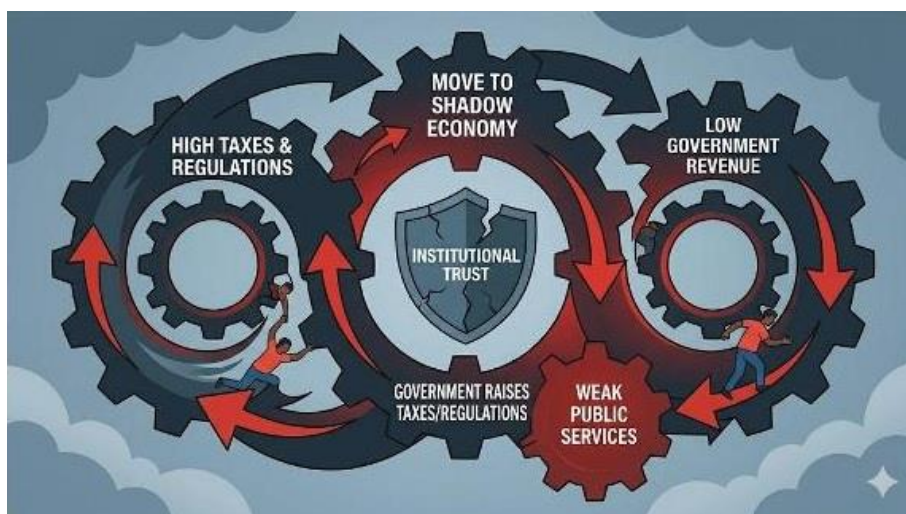
employment. In this regard, the conclusions of Medina and Schneider are confirmed (Medina & Schneider, 2018), that in developing countries the shadow economy performs a compensatory function and often serves as a means of economic survival.

The shadow economy relies heavily on cash transactions, which are difficult to trace and enable the non-reporting of income. There is a clear link between the development of payment systems and its size. In developed countries, widespread electronic payments are associated with a smaller shadow sector, while in less developed economies, where cash dominates, opportunities for informal activity are greater.

Schneider's study "The Shadow Economy in Europe, 2013" shows that economic crises affect developed and less developed countries differently. During downturns, the shadow economy expands as unemployment and falling incomes push individuals to seek alternative income sources. This effect is stronger in less developed countries, where social systems are weaker and cannot offset income losses.

The study distinguishes between European regions, highlighting differences between developed and less developed economies. In Western Europe, the shadow economy shows a steady decline, while in Southern Europe the process is slower, and in Eastern Europe, despite some progress, levels remain high. This indicates that even within a relatively homogeneous region such as Europe, economic development and institutional differences strongly influence the scale of the informal economy.

Figure 2. The concept of „The Vicious Cycle“



Sources: author and Gemini AI

The concept of “The Vicious Cycle” in the context of the shadow economy describes a self-reinforcing mechanism in which high levels of informal economic activity lead to the deterioration of public finances and the institutional environment, which in turn stimulates further expansion of the shadow sector. According to Schneider (*Schneider, 2013*) this process begins with the non-reporting of income and taxes, which reduces budget revenues and limits the ability of the state to finance public services.

As a result, the quality of public goods declines and trust in institutions weakens, reducing the motivation to comply with rules and increasing participation in the shadow economy. To offset losses, the state often raises taxes or strengthens regulations, which further encourages economic activity to remain outside official records. This creates a closed cycle in which weak institutions and a large shadow economy reinforce each other, especially in less developed countries, where limited administrative capacity and low economic formalization make the cycle harder to break.

Conclusion

In conclusion, it can be argued that the level of the shadow economy is directly related to the overall level of economic development, but this relationship is mediated by a number of factors such as the tax burden, institutional quality, and social norms. In developed countries, the shadow economy tends to have a more limited and complementary role, whereas in less developed countries it often performs a compensatory function and substitutes for missing or ineffective formal institutions. This understanding allows for a more precise formulation of economic policies aimed at reducing the shadow sector, taking into account the specific context of each group of countries.

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Списание „Глобални и регионални измерения на международните икономически отношения“ (съкратено **ГРИМИО**) е правопреемник на изданията с научните резултати от ежегодната *студентска научно-практическа конференция*, организирана от *катедра „Международни икономически отношения“* при Стопанска академия „Димитър А. Ценов“ – Свищов. До 2020 година изданията са сборници със самостоятелни ISBN номера, а от 2021 до 2023 година са периодичен сборник с постоянен ISSN номер – достъпни във Виртуалната библиотека на Стопанската академия на адрес dlib.uni-svishtov.bg.

Първата конференция е проведена през 1996 година по идея на проф. д-р ик. н. Иван Стойков и на гл. ас. д-р Симеон Момчев, преподаватели към катедрата. Участници са студентите от трети курс на специалност МИО към Стопанската академия, а тематичният фокус е върху международните инвестиции.

От 2014 година към събитието се присъединяват преподаватели и студенти от *катедра „Международни икономически отношения“* при Икономически университет – Варна, а през 2015 година и от *катедра „Икономика и международни отношения“* при Русенски университет „Ангел Кънчев“.

През годините конференцията се утвърди като форум за научна изява на студентите и докторантите извън учебната аудитория и създаде възможност за разчупване на формалните отношения лектор-обучаем, обмяна на опит в провеждането на мероприятия, свободно споделяне на творчески идеи. Постепенно тематиката се разшири и обхваща широк спектър от области, влизащи в сферата на международните икономически отношения и международния бизнес.

Пленарната сесия на *Тридесетата конференция* се проведе на 16 май 2026 г. присъствено в Базата за обучение на Стопанска академия в с. Орешак и в дистанционен формат чрез платформата BigBlueButton.

Journal “Global and Regional Dimensions of International Economic Relations” (abbreviated **GRDIER**) is the legal successor of the publications with the scientific results of the annual *student scientific-practical conference*, organized by *the Department of International Economic Relations* at Dimitar A. Tsenov Academy of Economics - Svishtov. Until 2020, the editions are conference proceedings with independent ISBN numbers, and from 2021 to 2023 they are periodical collections with a permanent ISSN number - available in the Academy’s Virtual Library at dlib.uni-svishtov.bg.

The first conference was held in 1996 on the idea of Prof. Ivan Stoykov and Head Assistant Simeon Momchev, lecturers at the department. The first participants were the 3rd year IER students at the Tsenov Academy of Economics, and the thematic focus was on international investments.

Since 2014, the event has been joined by professors and students from *the Department of International Economic Relations* at the University of Economics – Varna, and in 2015 from *the Department of Economics and International Relations* at the Angel Kanchev University of Ruse.

Over the years, the conference has established itself as a forum for the scientific expression of students and doctoral students outside the classroom and has created an opportunity to break the formal lecturer-student relationship, exchange experience in conducting events, and freely share creative ideas. Gradually, the topics have expanded and cover a wide range of areas, entering the sphere of international economic relations and international business.

The plenary session of *the Thirtieth conference* was held on May 16, 2026 at Dimitar Tsenov Academy’s Training and Recreation Center in the village of Oreshak and online through the BigBlueButton platform.

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